Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Impact of higher-order modes on parameter recovery from binary black hole coalescences LARNE PEKOWSKY, Georgia Institute of Technology — Thus far modeled searches for the gravitational waves produced by the coalescence of compact binaries have used templates that include only the 2,2 mode. However, it is known that there can be significant power in higher-order modes – indeed there are parameters for which these modes become dominant. Numerical relativity can now produce waveforms that are accurate though late inspiral, merger, and ring-down including many higher-order modes. We present recent work using waveforms produced at Georgia Tech to determine how the inclusion of higher modes in model waveforms can increase the accuracy with which the parameters of the system can be recovered from a detected signal in Advanced LIGO. We consider a variety of binary black hole systems, including systems that precess.

Larne Pekowsky
Georgia Institute of Technology

Date submitted: 10 Jan 2014 Electronic form version 1.4